

## Period and cohort expectation of life tables (2008-based)

Please use the index below to view tables showing period and cohort expectations of life for the United Kingdom and its constituent countries (Microsoft Excel files, 122kb each). These life expectancies have been calculated using historic mortality rates (from 1981 to 2008) and projected mortality rates from the 2008-based national population projections (for 2009 onwards).

Further information can be found below on:

- The mortality assumptions used in the 2008-based national population projections; and
- Period and cohort measures of life expectancy.

### Period expectation of life, 1981-2058

#### Principal projection

1. [United Kingdom](#)
2. [England](#)
3. [Wales](#)
4. [Scotland](#)
5. [Northern Ireland](#)
6. [England & Wales](#)
7. [Great Britain](#)

#### High life expectancy variant\*

8. [United Kingdom](#)
9. [England](#)
10. [Wales](#)
11. [Scotland](#)
12. [Northern Ireland](#)

#### Low life expectancy variant\*

13. [United Kingdom](#)
14. [England](#)
15. [Wales](#)
16. [Scotland](#)
17. [Northern Ireland](#)

### Cohort expectation of life, 1981-2058

#### Principal projection

18. [United Kingdom](#)
19. [England](#)
20. [Wales](#)
21. [Scotland](#)
22. [Northern Ireland](#)
23. [England & Wales](#)
24. [Great Britain](#)

#### High life expectancy variant\*

25. [United Kingdom](#)
26. [England](#)
27. [Wales](#)
28. [Scotland](#)
29. [Northern Ireland](#)

#### Low life expectancy variant\*

30. [United Kingdom](#)
31. [England](#)
32. [Wales](#)
33. [Scotland](#)
34. [Northern Ireland](#)

\*Variant projection expectations of life are not available for England & Wales and Great Britain

Historical period and cohort life expectancies based on mortality rates from the interim 2003-based and 2004-based national population projections are available from the GAD website at: [http://www.gad.gov.uk/Demography%20Data/Life%20Tables/Period\\_and\\_cohort\\_eol.html](http://www.gad.gov.uk/Demography%20Data/Life%20Tables/Period_and_cohort_eol.html)

## **Assumptions for mortality variants**

Current annual improvements in mortality rates vary considerably by age and sex. The mortality projections assume that for most ages these improvements will gradually converge to common 'target rates' of improvement, at each age and for both sexes, by the year 2033, and continue to improve at that constant rate thereafter. However, these mortality projections also assume that those born in the years 1923 to 1940 (cohorts which have consistently experienced relatively high rates of mortality improvement over the last 25 years) will continue to experience higher rates of mortality improvement than the rest of the population.

The target rate assumptions are as follows:

High variant: 2 per cent annual improvement at 2033, thereafter annual improvement remaining at 2 per cent. For those born between 1923 and 1940 rates of annual improvement in and after 2033 will rise to a peak of 3.5 per cent a year for those born in 1933 and then decline back to 2 per cent a year for those born in 1941 or later.

Principal projection: 1 per cent annual improvement at 2033, thereafter annual improvement remaining at 1 per cent. For those born between 1923 and 1940 rates of annual improvement in and after 2033 will rise to a peak of 2.5 per cent a year for those born in 1931 and then decline back to 1 per cent a year for those born in 1941 or later.

Low variant: 0 per cent annual improvement at 2033, thereafter mortality rates remaining constant. For those born between 1923 and 1940 rates of annual improvement in and after 2033 will rise to a peak of 1.5 per cent a year for those born in 1931 and then decline back to 0 per cent a year for those born in 1941 or later.

No improvement: 0% annual improvement, so mortality rates remain constant throughout the projection period at the levels assumed for 2008-09.

These assumptions produce the following period expectations of life at birth at 2033:

	<b>Standard variants</b>			<b>Special case scenario</b>
	High variant	Principal projection	Low variant	No improvement
<b>MALES</b>				
England	85.4	83.5	81.5	77.9
Wales	84.8	82.8	80.8	77.1
Scotland	82.9	80.7	78.6	75.2
Northern Ireland	84.3	82.3	80.3	76.6
United Kingdom	85.1	83.2	81.2	77.6
<b>FEMALES</b>				
England	88.4	87.1	85.8	82.0
Wales	87.9	86.6	85.3	81.3
Scotland	86.6	85.3	83.9	80.0
Northern Ireland	87.9	86.6	85.3	81.2
United Kingdom	88.2	86.9	85.6	81.7

## **Period and cohort expectations of life**

Expectations of life can be calculated in two ways: 'period life expectancy' or 'cohort life expectancy'.

**Period** life expectancy at a given age for an area is the average number of years a person would live, if he or she experienced the particular area's age-specific mortality rates for that time period throughout his or her life. It makes no allowance for any later actual or projected changes in mortality. In practice, death rates of the area are likely to change in the future so period life expectancy does not therefore give the number of years someone could actually expect to live. Also, people may live in other areas for at least some part of their lives.

**Cohort** life expectancies are calculated using age-specific mortality rates which allow for known or projected changes in mortality in later years and are thus regarded as a more appropriate measure of how long a person of a given age would be expected to live, on average, than period life expectancy.

For example, period life expectancy at age 65 in 2000 would be worked out using the mortality rate for age 65 in 2000, for age 66 in 2000, for age 67 in 2000, and so on. Cohort life expectancy at age 65 in 2000 would be worked out using the mortality rate for age 65 in 2000, for age 66 in 2001, for age 67 in 2002, and so on.

Period life expectancies are a useful measure of mortality rates actually experienced over a given period and, for past years, provide an objective means of comparison of the trends in mortality over time, between areas of a country and with other countries. Official life tables in the UK and in other countries which relate to past years are generally period life tables for these reasons. Cohort life expectancies, even for past years, usually require projected mortality rates for their calculation and hence, in such cases, involve an element of subjectivity.

Period life expectancies are sometimes mistakenly interpreted by users as allowing for subsequent mortality changes. Period life expectancy answers the question 'For a group of people aged  $x$  in a given year, how long would they live, on average, if they experienced the age-specific mortality rates above age  $x$  of the period in question over the course of their remaining lives?'

The cohort life expectancy answers the question 'For a group of people aged  $x$  in a given year, how long would we expect them to live, on average, if they experienced the actual or projected future age-specific mortality rates not from the given year but from the series of future years in which they will actually reach each succeeding age if they survive?' If mortality rates at age  $x$  and above are projected to decrease in

future years, the cohort life expectancy at age  $x$  will be greater than the period life expectancy at age  $x$ .